

Claims

1. A hand-held and hand-operated random movement-printing device controlled by at least one processor (4), and having a print head (2) assembly comprised in a housing (1), further comprising:
- 5 at least one position sensor means (3), sensing the position of the printing device on a print medium in relation to pixels to be printed;
- a memory, storing at least one image with its mutual image pixel coordinate data;
- a print-head array (60) provided with nozzles (12), for printing image pixels onto
- 10 the print medium in accordance with the pixel coordinate data during a printing sequence; wherein
- the image being built-up through sectional printing whereby each section has at least one print area interfacing at least one other print area, said interfacing print areas being correlated to fill-out transition print areas during printing of said sections through at least one
- 15 transition printing pattern by omitting printing of some pixels in said transition print area.
2. A printing device according to claim 1, wherein said omitted pixels in said transition area according to said printing pattern are randomly distributed.
3. A printing device according to claim 1, wherein said omitted pixels in said transition area according to said printing pattern are distributed according to a mathematical
- 20 algorithm.
4. A printing device according to claim 1, wherein said omitted pixels in said transition area are distributed according to a pre-stored printing pattern.
5. A printing device according to one of claims 1-4, wherein the probability of a pixel being printed within the transition area of an image section is decreasing towards that
- 25 peripheral side of the transition area facing a side of an image section for subsequent printing.
6. A printing device according to one of claims 1-5, wherein a pixel is printed within the transition area when both the image-pixel and the corresponding pixel of the transition pattern have a value TRUE for printing.
7. A printing device according to one of claims 1-6, wherein a pixel is omitted
- 30 within the transition area when one of an image-pixel and the corresponding pixel of the transition pattern have a value FALSE for printing.
8. A printing device according to one of claims 1-7, wherein a variable range of the outermost positioned nozzles in the array are arranged to provide the transition pattern.

9. A printing device according to one of claims 1-8, wherein the 5-20 outermost positioned nozzles at each end of the array are arranged to provide the transition pattern.

10. A printing device according to one of claims 1-9, wherein the transition pattern provides a gradually decreasing probability of pixel printing the further out the nozzles are located at each end of the array.

11. A printing device according to one of claims 1-10, wherein an earlier omitted pixel is printed during a re-printing sequence of the same image and an earlier printed pixel is omitted from re-printing.

12. A printing device according to one of claims 1-11, wherein the print head is of the ink-jet type having nozzle channels, arranged for spraying ink droplets from an associated ink container onto the print medium in accordance with the pixel coordinate data.

13. A method for a hand-held and hand-operated random movement-printing device controlled by at least one processor (4), and having a print head (2) assembly comprised in a housing (1), comprising the steps of:

15 sensing the printing device position on a print medium in relation to pixels to be printed;

 storing at least one image with its mutual image pixel coordinate data in a memory;

 printing image pixels through nozzles (12) in a print-head array (60) onto the print medium in accordance with the pixel coordinate data during a printing sequence; wherein

 the image being built-up through sectional printing whereby each section has at least one print area interfacing at least one other print area, said interfacing print areas being correlated to fill-out transition print areas during printing of said sections through at least one transition printing pattern by omitting printing of some pixels in said transition print area.

14. A method according to claim 13, wherein said omitted pixels in said transition area according to said printing pattern are randomly distributed.

15. A method according to claim 14, wherein said omitted pixels in said transition area according to said printing pattern are distributed according to a mathematical algorithm.

16. A method according to claim 15, wherein said omitted pixels in said transition area are distributed according to a pre-stored printing pattern.

17. A method according to one of claims 13-16, wherein the probability of a pixel being printed within the transition area of an image section is decreasing towards that peripheral side of the transition area facing a side of an image section for subsequent printing.

5 18. A method according to one of claims 13-17, wherein a pixel is printed within the transition area when both the image-pixel and the corresponding pixel of the transition pattern have a value TRUE for printing.

19. A method according to one of claims 13-18, wherein a pixel is omitted within the transition area when one of an image-pixel and the corresponding pixel of the transition pattern have a value FALSE for printing.

10 20. A method according to one of claims 13-19, wherein a variable range of the outermost positioned nozzles in the array provide the transition pattern.

21. A method according to one of claims 13-20, wherein the 5-20 outermost positioned nozzles at each end of the array provide the transition pattern.

15 22. A method according to one of claims 13-21, wherein the transition pattern provides a gradually decreasing probability of pixel printing the further out the nozzles are located at each end of the array.

23. A method according to one of claims 13-22, wherein an earlier omitted pixel is printed during a re-printing sequence of the same image and an earlier printed pixel is omitted from re-printing.

20 24. A method according to one of claims 13-23, wherein the print head is of the ink-jet type having nozzle channels, for spraying ink droplets from an associated ink container onto the print medium in accordance with the pixel coordinate data.